

Vol. 42

Friday, 5 July 1963

No. 1

TABLE OF CONTENTS

MEDICAL ABSTRACTS

Basophil Leukocytes in Ulcerative Colitis	3
Changing Health Problems of Developing Societies	4
Sorting: Possible Solution to Management of Mass Casualties	6
Contraindications and Side Effects of Some Ophthalmic Preparations	11
Subarachnoid Hemorrhage	12
Puerperal Sepsis - N. Y. State ...	13

MISCELLANY

The Naval Hospital Newport - Golden Anniversary	14
One Thousand Pints of Blood for Research at Great Lakes ...	16
Smallpox, Typhoid Reimmunization BuMedInst 6230.1C Sup-1	17
CBR Weapons Orientation Course.	18
AMA Occupational Health Congress	19
CD Medical Stockpile Depots	19

FROM THE NOTE BOOK

Training Dental Officers in Anesthesia	20
--	----

FROM THE NOTE BOOK (cont'd)

The Growing Menace of Accidents	20
AFIP Course Dates Changed....	21
Medical Research Reports	21

DENTAL SECTION

Analysis of Cuspid Protective Occlusion	22
Personnel and Professional Notes	25

PREVENTIVE MEDICINE

Unde Venis?	27
The Pop Bottle Can Be a Dangerous Weapon	33
Thallotoxicosis from Accidental Ingestion of Pesticides	34
Vector Control Without Insecticides	35
Know Your World	36
Effects of Drugs on the Driver..	37

RESERVE SECTION

Control and Organization of the Naval Reserve (cont'd) ...	38
--	----

MEDICAL NEWS LETTER

Vol. 42

Friday, 5 July 1963

No. 1

Rear Admiral Edward C. Kenney MC USN
Surgeon General

Rear Admiral A. S. Chrisman MC USN
Deputy Surgeon General

Captain M. W. Arnold MC USN (Ret), Editor
Contributing Editors

Aviation Medicine..... Captain A. P. Rush MC USN
Dental Section Captain C. A. Ostrom DC USN
Occupational Medicine....., CDR N. E. Rosenwinkel MC USN
Preventive Medicine CDR J. W. Millar MC USN
Radiation Medicine..... CDR J. H. Schulte MC USN
Reserve Section Captain K. W. Schenck MC USNR
Submarine Medicine CDR J. H. Schulte MC USN

Policy

The U. S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be, nor are they, susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

Change of Address

Please forward changes of address for the News Letter to: Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md., giving full name, rank, corps, and old and new addresses.

The issuance of this publication approved by the Secretary of the Navy on 28 June 1961.

Basophil Leukocytes in Ulcerative Colitis *

Lennart Juhlin. *Acta Medica Scandinavica*, Vol. 173, fasc. 3: 351-359, March 1963.

The etiology of ulcerative colitis is still under discussion. Allergic, bacterial, enzymatic, and psychogenic factors have been mentioned in the abundant literature on this subject.

A new concept of the problem was offered by McGovern and Archer. They found an increased number of mast cells around the vessels which penetrate the inner circular coat of the submucosa in patients with ulcerative colitis. These findings were confirmed by McAuley and Sommers. The mast cells contain histamine, heparin, and proteolytic enzymes which when they are released could give rise to the pathologic changes found in the disease. Thus, liberated histamine was considered to cause vascular congestion and a spastic state of the colon musculature. This continuous contraction of the muscle, together with the congestion and edema of the mucosa and submucosa, would convert the colon into a thick-walled, semirigid tube which no longer contracted segmentally and which lacked haustra. The relative absence of inflammatory cells in the submucosa prior to ulceration supports this interpretation. The superficial ulceration was thought to be due to simple excoriation. The authors concluded that ulcerative colitis was within the realm of psychosomatic disorders and added that nervous impulses induced excessive production of acetylcholine in the colon. According to McGovern, acetylcholine is a powerful histamine releasing agent.

However, "psychosomatic" factors need not be involved in incorporating the mast cells in theories concerning the pathogenesis of ulcerative colitis. A release of histamine from the mast cells can also be produced by allergic and enzymatic factors. The findings of Mirvich are of interest in this connection. He observed that mechanical stimulation of the normal looking mucosa in ulcerative colitis led to the development of a localized area of edema which resembled the "triple response" of the skin.

There is a "cousin cell" of the mast cell in the bloodstream, namely the basophil leukocyte, which is known to contain heparin and most of the circulating histamine. Priest et al observed an increased amount of basophils in artificially produced skin lesions in patients with ulcerative colitis. The increased amount of basophils found with the "skin window technique" was not due to an increase of the cells in the blood. For example, a patient with myelogenous leukemia with a high blood basophil level (37%) did not show this inflammatory response. The findings suggest that the basophil leukocyte might be a cell involved in the mechanism causing ulcerative colitis.

A new method for dealing with the basophil leukocytes has recently been described** (page 4). The basophils are divided into twenty different

* From the Department of Medicine (Head: Erik Ask-Upmark MD), University Hospital, Uppsala, Sweden.

types according to size, staining properties, and location of the basophil granules. Using this method, the author has studied the basophils of the blood, experimentally produced skin lesions, rectal secretions, and superficial suction biopsies of the affected mucosa. The number of basophils/mm³ blood has been compared with that of the eosinophils. In a few patients, the percentage of basophils in the bone marrow was examined simultaneously.

The number and morphology of the basophil leukocytes were investigated in 10 patients with ulcerative colitis. Specimens were taken simultaneously from blood, bone marrow, cantharidin skin blisters, rectal secretion, and superficial biopsies from the affected rectal mucosa. Patients in the acute stage of ulcerative colitis had an increased amount of blood basophils (74/mm³) as compared to normal subjects (35/mm³). Due to an increase in the total leukocyte count in ulcerative colitis, the percentage of basophils was the same as in normal subjects. The basophil percentage in ulcerative colitis was, however, significantly increased when compared to other patients with a similar degree of leukocytosis. The blood basophils probably contained more ($P < 0.05$) melted or fused granules in ulcerative colitis than in normal subjects and other patients used as controls. No correlation was found between the number of basophils and eosinophils in blood. Cantharidin-produced blisters of the skin contained 0.06—1.07% basophils which was the same as found in normal subjects. The basophils in the blisters were more degranulated than in blood and were often of the melted type. No correlation was found between the number of basophils in blisters and that in blood. In the acute stage of colitis, the rectal secretion contained between 0.001—0.2% basophils, all of which were degranulated with only a few residual granules. The number of basophils was similar in specimens from the superficial mucosa, but in these specimens the cells usually were nondegranulated.

No mast cells were found. The increase in basophil and eosinophil leukocytes subsided when the patients' condition improved. The possible role of the basophil leukocytes in the mechanism causing the pathological changes in ulcerative colitis is discussed.

* * * * *

The Changing Health Problems of Developing Societies

Based on a paper by René J. Dubos Ph.D, of the Rockefeller Institute,
New York City. DHEW, Pub Health Rep 78 (4): 344-345, April 1963

Wherever it has been possible to apply existing knowledge to the control of nutritional and infectious diseases, infant mortality has been all but eliminated, and the mortality during childhood and early adulthood much reduced. The

** Shelley, W.B. & Juhlin, L. : Functional cytology of the human basophil in allergic and physiologic reactions: technic and atlas. Blood 19:208, Feb '62.

result has been a spectacular increase in expectancy of life at birth. However, this achievement does not necessarily bring about a true prolongation of life nor a decrease in the amount of disease during adulthood and old age. In fact, true longevity is no more frequent in the highly industrialized areas than in the less prosperous countries. In general, the acute diseases that once destroyed life are replaced by chronic diseases that ruin it. There is no reason to believe that the increased frequency of chronic diseases during the second half of life in industrialized areas results in large part from changes in the ways of life brought about by industrialization. Although these unfavorable changes operate on a larger scale at the present time in the prosperous parts of Europe and the United States, they will certainly soon affect the rest of the world as it becomes more extensively industrialized and urbanized.

Although the factors that have increased the incidence of chronic diseases among adults in industrialized countries are not yet precisely known, there is some evidence that the following changes will increasingly play an important part.

In the past, many diseases resulted from microbial contamination. Today, chemical pollution of water, food, and air by the products and waste of industry is becoming an important threat to health.

More and more, the life of man is becoming dissociated from the natural cycles, daily and seasonal, under which his evolutionary development took place. Since these cosmic cycles are built into the human fabric, physiologic disturbances are likely to result when human activities are no longer geared to these rhythms.

The ancestral ways of life, the human interrelationships, and the working conditions are being altered so rapidly that individuals commonly fail to make the necessary emotional adjustments and, consequently, develop psychologic imbalances.

Many of the health problems brought into being by industrialization and urbanization are insidious in their development, often becoming manifest only after several years or even not until the following generation. Furthermore, these problems differ in nature depending upon the type of technology and other environmental factors; for example, the chemical pollutants of air or water differ profoundly in their chemical composition, and, therefore, in their toxic effects, from one place and time to another.

In view of these facts, health problems of the less developed countries cannot be solved by slavishly applying formulas developed elsewhere; they must be investigated in their own environmental context. Likewise, the delivery of medical services must be adapted to local conditions. The design of hospitals, their administration, and the programs of medical teaching and research that have prevailed in Europe and the United States until now were formulated to fit conditions and the state of knowledge in these societies half a century ago. Less developed countries should not copy these formulas, but rather adapt them to their own conditions and to modern medical knowledge.

By adapting, rather than adopting, the products of Western medical science, the emerging countries should be able to escape the health disasters which accompanied the first industrial revolution and might ward off some of the diseases of modern civilization.

* * * * *

Sorting: A Possible Solution to the
Management of Mass Casualties

(Concluded from Medical News Letter of 21 June)

From: Symposium on Management of Mass Casualties, USNH San Diego, Calif. Compiled and submitted by CAPT V. C. Stratton MC USN (Ret), formerly Chief of Surgery of the Hospital.

Having discussed the major classifications of injury, let us consider the categorization that is necessary to support the sorting concept. The categories are:

- | | | |
|-----------|-----|---|
| MINIMAL | 40% | These are individuals who require little or no professional treatment. They will rejoin the remaining fighting forces, or in civilian life will form the labor pool, work as litter bearers, assist in traffic regulations, etc. |
| IMMEDIATE | 20% | This group of individuals receives the highest priority. They can be treated by short lifesaving procedures, and thus be returned to duty or usefulness in a relatively short period of time. |
| DELAYED | 20% | This group contains those individuals who can wait for treatment without loss of life, although there will definitely be an increase in morbidity. This type of treatment is being done—to some extent—in civilian life today in the management of simple fractures. |
| EXPECTANT | 20% | This is the group of individuals whose injuries would require too much time, effort, and supplies to produce a satisfactory result in the initial stages of a disaster. These people are expected to live until something can be done for them; they are not expected to die. As previously noted, the mortality rate in the Crimean War was only approximately 20%—an indication that many of this group will live until they can be treated at some later time. |

Let us now look at what types of cases fit into each of these categories, first considering those which fit into the MINIMAL category. There are really two groups within this one category. One group will be those who can return to duty (or form the work pools in civilian life). Types of cases in this group include:

- a. Small lacerations and contusions
- b. Simple fractures of small bones, particularly of the upper extremity
- c. Second-degree burns of less than 20%, not including incapacitating burns of the face, hands, or feet

Another group will include those who will require domiciliary care, but will not require medical personnel to administer treatment. Types of cases in this group are:

- a. Second-degree burns of the face, hands, or feet that incapacitate. With this type of injury, the "buddy system" can be implemented; for example, the man with the burned hands can walk to a food source and the man with the burned feet (but unburned hands) can then feed the other patients.
- b. Disabling fractures of minor bones
- c. Moderate neuropsychiatric disorders. These individuals require only rest and food, and should be able to return to work shortly.

The next category is that of IMMEDIATE treatment. The types of cases that fit into this group are:

- a. Patients with hemorrhage from an easily accessible site. A good example of this would be a lacerated femoral artery in the thigh. Within a brief time (15 to 20 minutes), this wound could be cleaned, and the vessel clamped and ligated. This might mean an amputation at a later date, but it is likely that the patient would much prefer the decision of life over loss of limb.
- b. Rapidly correctable mechanical defects. A good example of this is the sucking chest wound. All that is required is that the wound be cleaned, the deeper structures sutured, and the chest made air-tight. The remainder of the problem can be taken care of by thoracentesis (insertion of a needle into the chest cavity to remove blood and/or air). This converts what is a really sick patient into a case which can be salvaged with the expenditure of a minimal amount of time.
- c. Severe crushing wounds of the extremities. Good examples of this type of injury can be seen on any local TV evening news program. All that is required is amputation, and this can be done in a very short period of time.
- d. Incomplete amputations. Again, all that is required is completion of the amputation. This type of surgery could be done by anyone, and does not require a highly trained surgeon. Dermatologists, radiologists, internists, in fact, all physicians should be taught to do the type of surgery which must be done in a mass casualty situation. The surgeon will be utilized either in sorting, or as advisor

or supervisor to those actually doing the surgery. This will permit the best utilization of the available personnel to provide the greatest good to the greatest number of people.

- e. Open fractures of major bones. This will require cleaning of the wound and immobilization, and then the patient can wait for more definitive treatment later on. This will not require a trained orthopedic surgeon, but the orthopedic surgeon's skills will be required later when anatomical alignment and restoration of function are the goals. Undoubtedly, there will be an increase in bone infection (osteomyelitis), but this can probably be controlled by the use of antibiotics which will be available later in the course of treatment.

This immediate group will require the most urgent treatment if they are to survive. But it must be realized that time consumed on any individual case will be brief, probably less than one-half hour. Formal debridements probably cannot be carried out. Such procedures are time-consuming if done correctly. Also, the precise nature of low velocity missile wounds is not clearly understood; low velocity missiles are expected to be the major injury-producing agents in a thermonuclear blast. Such missiles would be concrete, gravel, stones, wood, and metal which would be picked up and thrown by the blast wave. Presently, this problem is being studied at the Army Medical Service School, and it is hoped that an answer can be found as to the minimum amount of surgery required to obtain a satisfactory result.

As a result of this classification of injuries, the concept of what is the highest priority for surgery must be changed. In the past, it was the man with the abdominal wound, head wound, or chest wound who was given top priority for both evacuation and surgery. Because of the length of time these cases require, they now must wait so that many others who can be treated in the same length of time as one abdominal wound case can be given necessary care.

The next classification of injuries is those in the DELAYED category. Types of cases fitting into this category are:

- a. Moderate lacerations without extensive bleeding, or bleeding that can be controlled by a dressing. Those who have been in combat areas have seen many massive wounds which are not bleeding in patients appearing to be in relatively good condition. Nature's method of taking care of this problem has done the physician's work for him; namely, the clotting mechanism and retraction of the cut blood vessels.
- b. Closed fractures of major bones. These can easily be delayed after preliminary splinting has been carried out. They require some nursing care, such as giving narcotics for pain, positioning, and similar procedures.

- c. Noncritical injuries of the central nervous system. Patients in this category require nursing care to prevent them from aspirating food, secretions, or vomitus. There is no time for craniotomies (exploration of the brain), since these are definitely not procedures that can be done in one-half hour. Should the patient's condition become worse, he can then be transferred to the expectant group. Patients in the delayed treatment group actually require some care, but do not receive any actual surgical treatment at this time. The procedures carried out in this group can, in most instances, be done by the paramedical personnel.

The last classification is the EXPECTANT group. Again, it is emphasized that these casualties are expected to live and to receive treatment after those with the best chance of survival have been cared for. The types of cases in this group are:

- a. Critical injuries to the respiratory and central nervous systems. An example here would be a patient with a crushed chest. Surgery to correct this would require considerable time and a great deal of after-care which would not be possible under mass disaster circumstances. Another example is a compound fractured skull. To care for this case could require a neurosurgeon and 3 to 4 hours' time, plus a tremendous amount of postoperative nursing care. These just will not be available during a mass casualty situation.
- b. Significant penetrating abdominal wounds. These wounds would require an abdominal exploration which may require 2 to 3 hours or more, and that much time will not be available. Many of these cases will survive, just as they did in the preappendectomy days, by forming abdominal abscesses which rupture either through the skin or into the bowel.
- c. Multiple severe injuries. Included in this group would be the type of injuries seen following many automobile crashes. Today, many hours are spent working on this type of injury in an attempt to save the patient; but in the situation under discussion this would be a waste of manpower, supplies, and equipment, all of which will be in short supply in such a disaster.
- d. Severe burns of more than 40% of the body surface. This group would require a tremendous amount of care, and it is a known fact that when the burn is 40% or more, the mortality rate goes up extremely fast. Even under ideal conditions, such as are available in Surgical Research Units which have everything needed to care for burns of this magnitude, the mortality rate is still very high.

Let us examine the burn problem as it might be encountered in the hypothetical "City-X." As previously stated, about two-thirds of the patients would have burns in this situation. Based on the 14,583 casualties that resulted from the 20-kiloton blast, the following breakdown

of burns could be expected. The figures for the breakdown come from the Japanese experience at Hiroshima and Nagasaki; although there is some question as to their reliability, this is the only experience factor available.

<u>Estimated Burns - "City X"</u>	
<u>Percentage Body Surface Burned</u>	<u>14,583 x 65% = 9479 Burn Cases</u>
5% to 20%	9479 x 50% = 4739
20% to 40%	9479 x 40% = 3792
40% plus	9479 x 10% = 948

The group of persons with burns over 5% to 20% of the body will take care of themselves and assume duties as part of the working force. Those individuals with burns over 40% of the body will usually be sorted to the expectant treatment group, and made as comfortable as possible by the administration of narcotics to control pain.

Between these two groups there is a large group of casualties with burns over 20% to 40% of the body. These patients will receive immediate treatment, usually by the open method of burn treatment. Because of the enormous amount of nursing care required by a burn patient, paramedical personnel under the supervision of the physician will provide most of the treatment for these patients.

Earlier in the symposium the fact was mentioned that the use of tourniquets and/or ligation of bleeding major arterial vessels may result in an increased number of amputations. Let us once again use the example, "City-X," to see how much of a problem this really may be. From statistics of past wars, it has been found that 1 - 2% of battle wounds involve major peripheral arteries, ligation of which usually is followed by gangrene. The following table illustrates this problem:

<u>Total Injured - "City-X"</u>	<u>14,583 Individuals</u>
Number of cases of vascular injuries	145 (when using the 1% battle experience figure)

During World War II when very little vascular surgery was performed, the amputation rate differed very little from the World War I rate of 49%. In Korea, young surgeons were trained in vascular surgical technics using locally procured dogs for subjects. Subsequently, the amputation rate following vascular injury was reduced to 11 to 17%, depending upon whose series of figures are used. By using the average of these two (about 14%), the difference between 49% and 14% would result in an increase of about 35% (those cases requiring amputations who might not have had them if ample time, supplies, and equipment had been available). In figures, this would mean 50 more amputations due to the delay or method of treatment. Under disaster conditions, this might be considered a small price to pay for the saving of 50 lives threatened by uncontrolled bleeding.

Contraindications and Side Effects of
Certain Ophthalmic Preparations

From a Memorandum submitted by Ralph G. Smith MD, Acting Director, Bureau of Medicine, Food and Drug Administration, DHEW, to Mr. George P. Larrick, Commissioner of Food and Drug Administration, 28 May '63.

NOTE: The following statements are part of a drug warning letter recently issued to physicians by Dr. Larrick. —Editor

"Recent information gathered by the medical staff of the Food and Drug Administration with the assistance of a number of outside medical experts shows a need to warn physicians of certain contraindications to and side effects in the ophthalmic use of topical corticosteroid preparations, including their combinations with antimicrobial drugs.

1. The contraindications follow:

- a. Acute herpes simplex, vaccinia, varicella, and most other viral diseases of the cornea and conjunctiva
- b. Tuberculosis of the eye
- c. Fungal diseases of the eye
- d. Acute purulent untreated infections of the eye which like other diseases caused by microorganisms may be masked or enhanced by the presence of the steroid. Purulent conjunctivitis and purulent blepharitis are not indications, but contraindications for topical steroid or steroid-antibiotic combinations. If conjunctivitis and blepharitis are listed as indications, they should be qualified as non-purulent, not purulent.

2. Two important side effects follow:

- a. Extended use of topical steroid therapy may cause increased intraocular pressure in certain individuals. It is advisable that intraocular pressure be checked frequently.
- b. In those diseases causing thinning of the cornea, perforation has been known to occur with the use of topical steroids.

All manufacturers of topical corticosteroid preparations and steroid antimicrobial combinations intended for ophthalmic use have been requested to revise the labeling and advertising of these preparations to include warnings concerning the above contraindications and side effects."

New warnings are being required in the labeling of topical corticosteroid preparations for ophthalmic use. The warnings are shown in the foregoing memorandum prepared by the Bureau of Medicine, FDA DHEW. It has been requested that all manufacturers of topical corticosteroid preparations and steroid antimicrobial combinations intended for ophthalmic use include the warnings in labeling and advertising of these preparations.

From time to time, the Food and Drug Administration, individually or in cooperation with professional or industry groups, will issue statements of important drug developments from the standpoint of new and serious adverse reactions, warnings, and contraindications.

* * * * *

Prognosis of Subarachnoid Hemorrhage

Professor K. E. Kallio MD*, and G. AF Björkesten MD**. *Acta Medica Scandinavica*, Supplementum 392, Vol. 73: 7-75, 1962.

This study of the prognosis of subarachnoid hemorrhage has been made on the basis of an analysis of the cases of 387 patients admitted to the Neurosurgical Clinic of the Helsinki University Central Hospital during the years 1938 - 1959 inclusive. Intracranial arterial aneurysms were diagnosed in 120 patients; in the remaining 267 patients no cause for the bleeding was found in the bilateral carotid angiograms; 32 patients also had unilateral vertebral angiography performed. All patients were treated conservatively. All but 6 had survived at least one episode of bleeding.

At the follow-up, all patients could be traced. The mean follow-up period in the aneurysm series was 5 years for the survivors and 2 years for patients who died due to the subarachnoid hemorrhage. The corresponding figures in the no aneurysm series were 4.2 and 1.5 years.

In both the aneurysm and the no aneurysm series, females and males were represented in about the same proportion. In both series, the highest incidence of subarachnoid hemorrhage occurred in the third and fourth decade of life, the mean being just over 40 years.

Out of the 115 patients with intracranial arterial aneurysm who survived their initial attack of subarachnoid hemorrhage, 63 (55%) had one or more attacks of recurrent bleeding. Forty-eight patients succumbed in the recurrence, forming 42% of all patients and 76% of the patients who experienced recurrences. Sixty-two percent of the recurrences happened within 8 weeks from the first hemorrhage, and 41% within the first 4 weeks. Thirty percent occurred later than 1-1/2 years after the first hemorrhage; the longest interval was 9 years.

In the no aneurysm series, the incidence of recurrence of bleeding was 17% (45/266); 3% died. The first recurrent bleeding occurred within 8 weeks in the case of 56%, but after an interval of 1 to 14 years in the case of 30%.

The present study shows that, in a series of patients who survive the first attack of subarachnoid hemorrhage, the mortality due to recurrence of bleeding is over ten times higher among patients with proven intracranial aneurysm than among those without demonstrable vascular lesions in bilateral carotid angiograms.

* Head, Neurosurgical Clinic, Helsinki University Central Hospital

** Neurosurgeon-in-Chief of the Hospital

Forty-five percent of 60 survivors in the aneurysm series were partially or totally incapacitated due to the aneurysmal subarachnoid bleeding. The corresponding percentage in the no aneurysm series was 33. Age did not influence the number of recurrent hemorrhages or mortality in recurrence. The condition of the older group in the no aneurysm series was more affected than that of the younger age group. There was no difference between the two sex groups as regards prognosis.

Hypertension appeared to have no significant influence on the mortality of patients with subarachnoid hemorrhage, but at the time of follow-up the hypertensive patients seemed to be more frequently incapacitated by sequelae persisting after their hemorrhage.

The incidence of neurologic deficits during the episode of bleeding was the same in the aneurysm and the no aneurysm series, 25 and 24%, respectively. In both groups, the symptoms were transient in about half of the patients.

Loss of consciousness occurred in about half of the patients in both series; in 57% in the aneurysm series, and in 48% in the no aneurysm series. Disturbances of consciousness at the time of hemorrhage proved to be of no prognostic significance as regards cerebral symptoms in surviving patients.

Large aneurysms bled again more easily, and mortality in recurrent bleeding was higher among patients with large aneurysms than in the group with small aneurysms.

The location of the aneurysm did not seem to influence the prognosis as regards recurrent hemorrhage or mortality. The aneurysms situated on the anterior cerebral—anterior communicating—pericallosal arteries seemed to be somewhat more dangerous than those in other locations, although the difference was not statistically significant.

Altogether, 24 patients died in the hospital, 4 from the primary hemorrhage, and 20 from a recurrence either before the surgery which had been planned or before the diagnosis was made. For various reasons, 96 patients were left to be treated conservatively, one died from sequelae of the first bleeding and 28 from a recurrence. Admittance to hospital at an earlier stage after the hemorrhage, no unnecessary delay in the investigations and operations, and perhaps, a surgically more active attitude toward aneurysms formerly regarded as inoperable would probably have reduced the number of deaths to a certain degree; but in this respect no exact figures can be given.

* * * * *

Puerperal Sepsis - New York State

During the period, 9 to 19 November 1962, seven cases of postpartum infection occurred among patients on a hospital obstetrical service in New York State. All suffered sudden onset of fever with temperatures up to 104°F. Cultures of the cervix from all patients yielded hemolytic streptococci and each patient responded promptly to treatment with combinations of penicillin and broad spectrum antibiotics. The shortest observed period from admission to onset of illness was 48 hours.

During the outbreak, a house staff member who had been in contact with all of the seven cases was observed to have a sore throat and a draining paronychia. Cultures of the throat and finger yielded hemolytic streptococci. The house officer was barred from duty on 17 November, given a course of penicillin therapy, and allowed to return to work following clinical recovery and conversion of the throat cultures to negative. No subsequent cases have been observed.

While cultures were not available for serotyping, the epidemiologic evidence pointed to the resident house staff member as the source of infection. No other members of the nursing or house staff were observed to be ill.

—Reported by Virginia L. Oliver, Epidemiologist, N. Y. State Dept of Health, Morbidity & Mortality Weekly Rep, CDC, 12:134, 26 Apr '63.

* * * * *



MISCELLANY

The Naval Hospital Newport - Golden Anniversary

On 15 April 1963, the Naval Hospital Newport, R. I., celebrated 50 years of illustrious service to both the Armed Forces and, in several instances, to civilians.

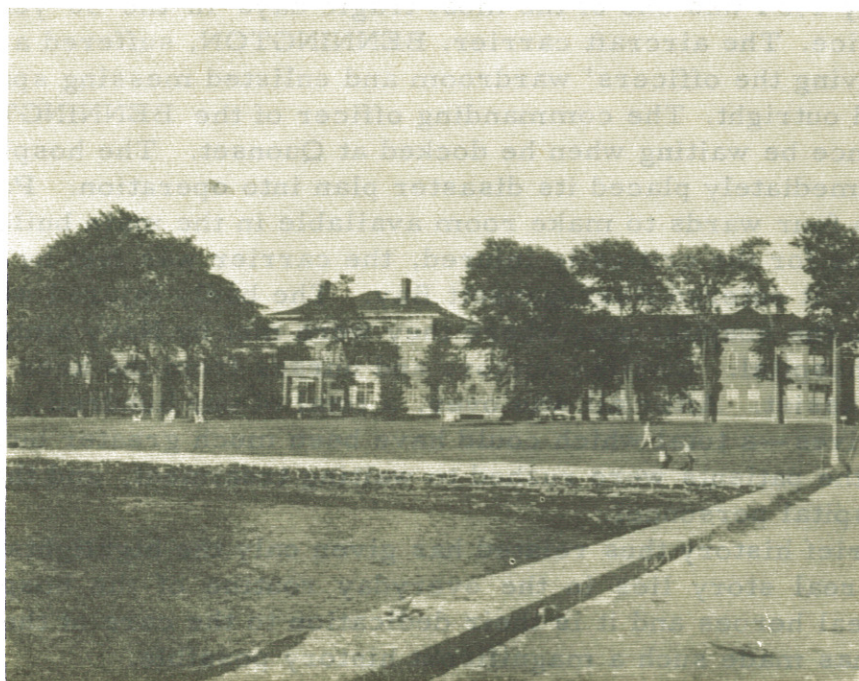
Newport itself has been serving as a harbor for the U. S. Navy since 1883. By 1896, the Naval Base was still very small, concentrated on Coaster's Harbor Island and centered around the Naval War College. In the remote corner of the island, a three-story wooden structure, 60 feet long and 33 feet wide, was built in 1896 by the Bureau of Medicine and Surgery. This building served as a naval hospital for the Newport area from 1898 until 1913. It remained vacant from 1913 until 1917 when it was opened for use as a hospital corps training school. Several one-story structures, constructed alongside the original building, were utilized for the housing, messing, and training of corpsmen. Although the school was closed in 1923 and the structures attached to it razed, the original building remained.

The Government purchased 15.33 acres of land in 1909; upon this tract was erected the present hospital. It was in the shape of a "T" with two wings of two wards each; the main section was used for the operating suite, SOQ, messing, and administrative offices. No housing was available on the base for medical officers, so they, like the Medical Director, lived in town. The present wards A and C, B and D, were in the two wings of the "T" shaped building.

The hospital was officially opened on 15 April 1913. The Medical Director, P. W. Nash, his staff, and 60 patients were transferred to the new

hospital building. The bed capacity was 150 patients; on the staff were four medical officers, one dental officer, eleven nurses, one pharmacist, twenty-six hospital corpsmen, and thirty-two civilian employees.

U. S. Naval Hospital, Newport, Rhode Island



Official photograph by the U. S. Navy

In 1916, a German submarine, the U-53, attacked several British and Canadian vessels off Block Island. A number of civilians—women and children—were housed, fed, and treated at the hospital until arrangements were made to transport them to New York. Upon the United States' entry into World War I, nine additional wards with a bed capacity of 390 were constructed. The number of patients treated increased from 60 in 1913 to 423 on 31 December 1917.

In 1917, a severe diphtheria epidemic broke out among the civilian population of Newport which was beyond the capacity of the small Newport civilian hospital. Even though involved in a war, the Naval Hospital allotted three temporary wards and provided staff personnel and drugs to care for the unfortunate.

The northeast wing was added in July of 1932—the present location of wards E and G. At that time, the addition provided an additional 56 beds, a Dental Department, Roentgenology Section, and Basal Metabolism Section. In 1939, a second wing (now wards F and H) was added to the main hospital building. This wing provided another 56 beds, an EENT Department, and Bacteriology and Pathology Departments.

The year 1942 revealed major changes for the Naval Hospital. Pavilions 5, 6, 7, and 8 were completed, a five-car garage built for ambulances, and, adjoining P-8, construction was started on new hospital corps quarters.

In July 1943, Newport's first WAVE personnel (one officer and twenty-five enlisted) reported aboard to serve in the hospital. Then, in 1944, Building No. 45 was built to serve as nurses' quarters. This building is now being used for Waves' quarters and an outpatient service. A galley and operating room were added in May 1954.

27 May 1954 was one of the most tragic days in the 50 years of the hospital's service. The aircraft carrier, BENNINGTON, suffered a disastrous explosion involving the officers' wardroom and enlisted messing spaces. Ninety-one were killed outright. The commanding officer of the BENNINGTON requested that assistance be waiting when he docked at Quonset. The hospital was notified and immediately placed its disaster plan into operation. Patients were evacuated from four wards to make room available in the main building. To speed assistance for the critically injured, the carrier was met by helicopters from Quonset as it entered Narragansett Bay. The badly injured were transported by air to the hospital pier where they were met by Navy ambulances and brought to the hospital. Civilian doctors and nurses from the area arrived at the hospital to assist. After all was over, a total of one hundred and three men had lost their lives—a total which could have been much greater but for the expedient way the patients were rushed to waiting treatment, and the outstanding work of hospital personnel.

The brief history thus related has given only the highlights of the past 5 years. The real story lies in the everyday routine of the hospital staff. They are the real heroes and it is their dedication to the care of the sick and injured which has made such a magnificent history possible.

* * * * *

One Thousand Pints of Blood Collected for Research Project at Great Lakes

One thousand pints of blood were collected from Navy recruits at the Great Lakes Naval Training Center on 27 April 1963 for a project to develop a preventive for the common cold and other respiratory diseases. Naval Medical Research Unit No. 4 and the American Red Cross are conducting the project. Recruits from some 30 States who had experienced respiratory infections volunteered to donate blood during the one-day collection. This blood will be used in evaluating the use of hyperimmune gamma globulin in prevention of respiratory infections among Great Lakes recruits.

This is the second recent massive blood collection at Great Lakes. A similar collection of 1035 pints was made in December 1962 to start the current research project. Hyperimmune gamma globulin processed from blood collected last December is now being given to about 2600 Great Lakes recruits. The first evaluation on the success of the current inoculations was to be announced about 15 June 1963.

Naval Medical Research Unit No. 4 at Great Lakes conducted the test project in cooperation with the American Red Cross. The blood collection was performed by the Badger Red Cross Blood Center staff of Madison, Wis. The

blood is now being processed at a private facility under the auspices of the American Red Cross. A complicated process known as "Cohn fractionation" will remove the hyperimmune gamma globulin. It will take approximately two months for the 1000 pints to be processed.

Returned to Great Lakes this summer, the antibody substance will be injected in the fall in varying dosages to about 2600 newly reporting recruits. At the same time, antibody from blood collected in December also will be injected to an additional 2600 recruits.

The incidence of respiratory infections will be compared between different dosages and against that of nontreated personnel. Using two different batches of hyperimmune gamma globulin will permit evaluation between blood collected during periods of peak respiratory infections in fall and spring. It is thought likely that the same infections did not predominate in both periods. In the spring of 1964, an estimated 2600 recruits also will receive injections of hyperimmune gamma globulin from the blood collected on 27 April 1963.

* * * * *

DEPARTMENT OF THE NAVY
Bureau of Medicine and Surgery
Washington 25, D.C.

BUMED 6230.1C SUP-1
BUMED-721-BFG:rd
19 April 1963

BUMED INSTRUCTION 6230.1C SUP-1

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: Smallpox and typhoid reimmunization requirements

1. Purpose. To promulgate smallpox and typhoid reimmunization requirements for certain personnel.

2. Action. Personnel assigned to activities indicated below shall be reimmunized annually against smallpox and typhoid-paratyphoid fever regardless of geographical area in which located:

b. Fleet units designated by Fleet or force commanders.

c. U.S. Navy seal teams.

d. U.S. Navy preventive medicine units and disease vector control centers.

e. Surgical teams (BUMEDINST 6440.1 series NOTAL).

f. Augmentation personnel for medical units, Fleet Marine Force and Amphibious Forces (BUMEDINST 6440.2 series NOTAL).

a. Fleet Marine Forces, organized Marine Corps Reserve units including mobilization teams.

A. S. CHRISMAN
Acting

Distribution:
SNDL Parts 1 and 2
Marine Corps Lists "H" and "I"

Additional copies may be obtained from:
Supply Dept., NAVSTA (Wash. NAVYD Annex,
Code 514.25), Washington 25, D.C.

* * * * *

Chemical, Biological, and Radiological
Weapons Orientation Course

Twenty-five classes in the Chemical, Biological, and Radiological Weapons Orientation Course will be conducted at the U. S. Army Chemical Corps Proving Ground, Dugway Proving Ground, Dugway, Utah, by the Department of the Army during the Fall 1963, Winter and Spring 1964. The duration of the course is three and one-half days.

Officers of Commander through Flag rank are eligible to attend. Civilians in the grade of GS-13 or higher must be in a key position where need-to-know is mandatory. Persons who have received complete CBR briefings during the past year should consider delaying their attendance. TOP SECRET security clearance is required. Limited quotas will be provided the Bureau of Medicine and Surgery by the Chief of Naval Personnel on a "first come first served" basis.

The course provides a high level orientation on Chemical, Biological Warfare, and Radiological Implications of Nuclear Warfare, and is designed to acquaint senior military and civilian personnel of the Armed Forces with United States doctrine, policy, technics, and capabilities in CBR Warfare.

The scope of this course relates to national policy concerning CBR Warfare; United States present and potential capabilities for waging CBR Warfare, foreign capabilities; concepts, technics, target analysis, systems of employment, integrated weapons systems, operational applications, comparative logistics, strategic appraisal, joint aspects, convert activities, and future developments in Chemical and Biological Warfare; live firing demonstrations employing chemical agents against typical tactical target; staff responsibilities in radiological fallout prediction, monitoring, survey, and radiological recovery; student-faculty panel.

Requests should be forwarded in accordance with BUMED INSTRUCTION 1520.8. Courses are scheduled for September, October, November, and December 1963, and March, April, May, and June 1964. Requests must be received in the Bureau of Medicine and Surgery by the following dates:

<u>Months of Courses</u>	<u>Deadline for Request to Reach BuMed</u>	
September 1963	22 July	1963
October 1963	12 August	1963
November 1963	9 September	1963
December 1963	7 October	1963
March 1964	6 January	1964
April 1964	10 February	1964
May 1964	9 March	1964
June 1964	6 April	1964

—Training Branch, Professional Division, BuMed

AMA Occupational Health Congress
to be Held in San Francisco

America's Best Resource - the Healthy Worker will be the theme of the 23rd National Congress on Occupational Health in San Francisco, September 25-26, 1963. The two-day meeting at the Jack Tar Hotel is sponsored by the American Medical Association's Council on Occupational Health. The conference theme will be developed by AMA President, Edward R. Annis MD, Miami, Fla., in his remarks at the opening session and will be further expanded through four symposia. They are:

Occupational health problems faced by the family
physician
Educational resources for the practicing physician
Restoration to gainful employment
Relationship of personnel department to the medical
department

Other conference subjects will include: Manipulation and Postural Balance in Low-Back Pain; Industrial Absence and the Personal Physician; Legal Responsibility of the Physician to the Nurse in Small Industry; Medical Programs for Small Plants; and Community Resources for Small Plant Programs.

The Annual Physician's Award of the President's Committee on Employment of the Handicapped will be presented during the Congress. The AMA meeting will be immediately followed by the two-day Seventh Annual Western Industrial Health Conference.

For additional information, write to: Council on Occupational Health, American Medical Association, 535 North Dearborn, Chicago 10, Ill.

* * * * *

Civil Defense Medical Stockpile Depots
Inspected by Public

The United States Public Health Service held open house at twenty Civil Defense Medical Stockpile Depots in fifteen States on 27 May 1963. The general public was invited to inspect these installations where they saw first hand what medical supplies and equipment are being stored for use in a national emergency. Visitors were escorted on tours by the Managers of the Depots.

Locations of the host Depots are: California - Mira Loma and Stockton; Illinois - Carterville and Seneca; Indiana - Jeffersonville; Iowa - Hampton; Massachusetts - Gilbertville; Mississippi - Prairie; Missouri - Neosho; New York - Horseheads and Romulus; Ohio - Shelby; Pennsylvania - Lebanon, Montoursville, and Shamokin; Tennessee - Rockwood; Texas - Bastrop; Utah - Clearfield; Virginia - Penniman; Washington - Spokane.

One major resource in the 200 million dollar National Emergency Medical Stockpile is the Civil Defense Emergency Hospital (CDEH). This is

a functional 200-bed general hospital stored in crates which can be set up quickly in an existing structure—such as a school, church building, or community center—to serve as an independent medical unit. CDEH's may also be used to extend the facilities of permanent hospitals which are inadequate to meet the contingencies of a major disaster.

To date, the Federal Government has purchased 1930 CDEH units at a cost ranging from \$21,000 to \$26,000 each. They are prepositioned in carefully selected, dispersed, strategic locations throughout the United States. The hospitals can be relocated, erected, and staffed at actual disaster sites within a matter of hours.

Management of the Civil Defense Emergency Medical Stockpile is part of the PHS responsibility for various health and medical functions in natural and manmade disasters. The total emergency preparedness program is coordinated by the Division of Health Mobilization, Office of the Surgeon General, PHS, and is directed to six major areas of assistance to States and local communities: planning and evaluation, medical stockpile management, health resources, program services, research, and training.

—From U. S. Dept of HEW, Public Health Service

* * * * *

FROM THE NOTE BOOK

Training Dental Officers in Anesthesia. Numerous ships and isolated activities have one medical officer and one or more dental officers assigned. Situations have occasionally arisen at such commands where the medical officer has had to perform emergency surgery and has been seriously handicapped by anesthesia difficulties which threatened to seriously compromise the final results of treatment. To increase the emergency surgical capabilities of combatant ships and isolated stations, training is being provided in anesthesia technic for dental officers. This training is conducted at thirteen Naval Hospitals four times a year as prescribed in BUMED INSTRUCTION 6460. 5.

The Growing Menace of Accidents. Accidents there have always been. Hippocrates and Galen recorded them frequently. It might be the case of a shipwright who contracted tetanus because an anchor crushed his hand. It might be that of a Roman gentleman whose chariot crashed on a stone and gave him the ancient equivalent of a "slipped-disk." Accidents are as universal in their incidence as they are diverse in their causation. But again, with the retreating tide of other forms of mortality they achieve greater relative, as well as greater absolute, importance. Their importance derives not only from their frequency and, with modern methods of locomotion, from their severity, but also from the fact that their incidence tends to be heavy among the young as well as among the aging and aged. Every accidental death of a child is a draft on the bank of human resources and is an outstanding claim for attention and action. With the elderly, an accident often implies expensive hospitalization and permanent incapacity—which is perhaps too often accepted with undue passivity. —WHO (1963 Second report on the world health situation, 1957-60)

Dates of AFIP Course Changed. In the 7 June issue of the Medical News Letter, page 20, announcement was made of a course—The Pathology of Radiation Injury—to be presented by the Armed Forces Institute of Pathology. The dates for this course have been changed to 14 - 18 October 1963.

* * * * *

Naval Medical Research Reports

U. S. Naval Medical Research Laboratory, U. S. Naval Submarine Base, New London, Conn.

1. Sensitivity to Unidirectional Frequency Modulation: MR 005. 14-1001-2. 10 Report No. 395, December 1962.
2. Effect of Oxygen-Rich Atmospheres on Cerebral Lipid Peroxides: MR 005. 14-3002-8. 04 Report No. 393, December 1962.
3. Bibliography of Submarine Human Engineering: MR 005. -4-1100-2. 06 Report No. 399, February 1963.
4. Lighting Survey of USS TRINGA (ASR-16): MR 005. 14-1100-1. 09, March '63.

U. S. Naval School of Aviation Medicine, U. S. Naval Aviation Medical Center, Pensacola, Fla.

1. Comparison of the Symptomatology Experienced by Healthy Persons and Subjects with Loss of Labyrinthine Function when Exposed to Unusual Patterns of Centripetal Force in a Counter-Rotating Room: MR 005. 13-6001 Subtask 1 Report No. 70, June 1962.
2. Experiments with Drosophila Melanogaster in Magnetic Fields: MR 005. 13-9010 Subtask 1 Report No. 7, August 1962.
3. Effect of Prior X-Irradiation on the Survival of Mice in Explosive Decompression: MR 005. 13-1002 Subtask 17 Report No. 3, October 1962.
4. Positional Alcohol Nystagmus in Relation to Labyrinthine Function: MR 005. 13-6001 Subtask 1 Report No. 76, December 1962.
5. Rorschach and MMPI Responses in Severe Airsickness: MR 005. 13-5001 Subtask 1 Report No. 22, January 1963.
6. Tolerance of Mice X-Irradiated in an Oxygen Rich Environment to the Stress of Explosive Decompression: MR 005. 13-1002 Subtask 17 Report No. 4, February 1963.
7. Selection Procedures for Non-Pilot Naval Aviation Officers: MR 005. 13-3003 Subtask 1 Report No. 36, February 1963.
8. Rotary Autokinesis and Displacement of the Visual Horizontal Associated with Head (Body) Position: MR 005. 13-6001 Subtask 1 Report No. 77, March 1963.
9. Separation of Aviation Officer Candidates from Cadets for Purposes of Predicting Voluntary Withdrawals: MR 005. 13-5001 Subtask 1 Report No. 23, March 1963.

* * * * *

DENTAL



SECTION

Analysis of the Cuspid
Protective Occlusion

Cdr Perry C. Alexander, DC, USN, U.S. Naval Dental Clinic, U.S. Naval Station, Long Beach, Calif. J Pros Den 13(2): 309-317, March-April, 1963.

A theory presented by D'Amico concerning the function of the canine teeth has stimulated a new interest in the field of the occlusion of the natural dentition of man. The crux of this concept is expressed in the statement: "All primates present prominent canine teeth modified in size according to specie. The over-bite and interlocking relation of the upper canines is the natural articulation of those teeth and common to all primates, including man. Their main function during mastication is to guide the mandible into centric relation in a medial-vertical direction, so as to prevent the contact of the remaining opposing teeth until they meet in centric occlusion. "

Theory of Balanced Occlusion

D'Amico is opposed to the theory of balanced occlusion and, as a result, has raised doubt among dentists as to the correct treatment of the natural dentition of man. One of the basic tenets of this theory is the establishment of group function of the teeth in all functional excursions of the mandible.

Group function is not feasible in all natural dentitions because of the many variations that occur in tooth form and position. However, if a sufficient number of teeth contact in the various excursive movements of the mandible and satisfy the functional requirements of the periodontal tissues, then the ideal balanced occlusion is not necessary. This basic concept is in direct contrast to D'Amico's statement, "The upper canine teeth, when in functional contact with the lower canines and first premolars, determine both lateral and protrusive movements of the mandible. Also, this functional relation opens the vertical relation thus preventing any force to be applied to the opposing incisors, premolars, and molars which would be at an angle to their long axis. "

The anatomy of the maxillary canine tooth is such that it may be able to withstand a greater force than other teeth, but it should not be needlessly placed in jeopardy. The canine teeth are subject to the same destructive aspects of periodontal disease as other teeth, when the etiologic factors capable of producing the disease are present.

The canine tooth should not be permitted to withstand the entire force of occlusion as a preventive measure to "protect" the remaining teeth. The inclined

planes of as many teeth as possible should be brought into contact in the working relationship as well as in the protrusive position when occlusal equilibration is indicated. Glickman states: "In some instances there is anterior tooth interference in lateral excursion even after protrusive excursion has been corrected. This most commonly occurs in the canine area. In such cases further adjustment of the canine is necessary as part of lateral correction."

Cuspal Interference and Temporomandibular Joint Pain

The origin of temporomandibular joint pain can often be traced directly to cuspal interferences in which the maxillary and mandibular canine teeth are the only teeth making contact in working lateral excursion. Treatment involves the reduction of the lingual surfaces of the maxillary canines without disturbing the contact in centric occlusion. In this manner, the lingual inclines of the buccal cusps of the maxillary premolars and molars are brought into contact so as to achieve group function, provide a smooth gliding movement of the mandible, and release the muscles from strain. I have treated many patients and relieved pain referred to the temporomandibular joint from the muscles of mastication by the simple expedient of reducing the lingual surfaces of the maxillary canines.

A method of fabricating a pin-ledge inlay specifically for building up or restoring the lingual surfaces of maxillary canines worn by attrition is advocated by the followers of the "cuspid protective mechanism" concept. This practice may initiate degenerative changes in the periodontium of the canines or become a source of temporomandibular joint pain due to cuspal interferences and lack of group function in lateral excursion. Conversely, failure to eliminate an interference in the canine region in lateral excursions of the mandible when a temporomandibular joint syndrome is present may perpetuate an existing problem. The presence of a facet on the lingual surface of the cuspid is not indicative of an overclosure of the vertical dimension of occlusion.

Canine teeth which prevent other teeth from making contact in the excursive movements of the mandible may result from a lack of normal attrition of the teeth of modern man. The present-day diet and modern methods of preparing food do not furnish the abrasive qualities necessary for normal attrition. Sicher states: "Wear of the teeth is, in most mammals, a physiologic and regular occurrence. In fact, the teeth of many species are not well adapted to mastication before attrition has removed the smoothly curved cusps." He further states: "Regular attrition in man can be regarded as an ideal, not any more as the normal occurrence."

Compensatory Eruption of Teeth

As teeth wear, there is a compensating factor occurring with the continuous eruption of teeth. Attrition is not limited only to the masticatory surfaces and edges of the teeth, but is also a normal physiologic process at the contact areas of adjacent teeth. Occlusal and incisal attrition are normally compensated by the continued vertical eruption and contact attrition by the mesial drift of the

teeth. Orban states: "The continued vertical eruption also compensates for occlusal or incisal attrition. Only in this way can the occlusal plane and the distance between the jaws during mastication be maintained—a condition which is essential for the normal function of the masticatory muscles."

Balanced Occlusion

The purpose of occlusal equilibration is the elimination of excessive functional forces so as to prevent injury to the periodontium. Excessive tooth structure is not sacrificed needlessly to obtain the ideal balanced occlusion. The excessive functional forces can be eliminated by achieving group function which may include several, but not all, of the teeth capable of making contact in the various eccentric excursions. The normal vertical overlap of the canines is not destroyed, and yet the canine tooth is ground until there is simultaneous contact of as many upper and lower teeth as possible in all eccentric movements.

The potentiality of exceeding the physiologic limitations of the periodontium due to excessive functional forces increases as the number of teeth that are in contact is reduced. A normal process of repair and destruction is constantly occurring in the periodontium and when this relationship favors destruction because of excessive functional forces, injury to the periodontium will occur. These degenerative changes in the periodontium are reversible. Therefore, the rationale of equilibrating the occlusion is to reduce the excessive functional forces and permit repair to occur. This is accomplished by eliminating deflective occlusal contacts in both centric and eccentric positions.

Proprioceptive Impulses in Relation to Canine Teeth

Another point worthy of consideration is D'Amico's conclusion that the periodontal membrane of the canine teeth transmits desirable periodontal proprioceptor impulses by way of the central nervous system to the muscles of mastication to a greater degree than any other teeth, thus reducing muscular tension and thereby the magnitude of the applied force. The evidence given in support of this statement is the clinical observation that the canine teeth of the maxillary dental arch are usually the last teeth to be extracted in the adult. The inference is that the extrasensitivity of the periodontal membrane surrounding the canine tooth is capable of protecting that tooth from excessive functional forces through proprioceptive stimulation.

The functional forces of occlusion are transmitted from the teeth to the periodontal membrane stimulating Pacinian corpuscles. The Pacinian corpuscles, receptor organs located in the periodontal membrane, are extremely sensitive to changes in pressure that are transmitted through the teeth. Pacinian corpuscles are also located in muscles, tendons, ligaments, and other deep structures. According to Jarabak, the proprioceptors of the periodontal membrane are more sensitive than those found in the muscles and tendons. The electromyographic studies of Moyers indicate that all teeth possess the same degree of sensitivity to proprioceptive impulses.

Conclusions

The conclusions reached from the foregoing discussion are:

1. The balanced occlusion theory is a valid concept substantiated by physiologic, biologic, histologic, and clinical evidence.
2. The role of the canine tooth is to function in unison with the remaining teeth and not as an independent entity.
3. The proprioceptive responses of the periodontal membrane of the canine teeth are not more sensitive than those of the periodontal membrane of other teeth in the same mouth.
4. The "building up" or restoration of the anatomy of the lingual surface of the maxillary canine tooth so that it will function alone in eccentric positions is contraindicated.
5. The loss of vertical dimension based only on the attrition of teeth in prehistoric skulls is considered invalid in view of the well-documented evidence supporting the continuous eruption theory by Gottlieb and the relative stability of the vertical relation of rest position as supported by cephalometric, clinical, and electromyographic studies.
6. The development of an edge-to-edge occlusion as proposed by D'Amico is unacceptable as it refutes the concepts of the relative stability of the rest vertical dimension and the continuous eruption theory.

* * * * *

Personnel and Professional Notes

Officer Correspondence Course—"Leadership." The Chief of the Dental Division strongly recommends that all dental officers complete the correspondence course "Leadership" NAVPERS 10903-A which is administered by the Naval Correspondence Course Center.

The importance of effective leadership in the Navy has never been greater than it is today. The increasing power and complexity of modern weapons, the struggle being waged for the minds of men everywhere, and the necessity for maintaining the security of the United States make it imperative that our leadership be of the highest caliber at all levels of command. It is not too much to say that the accomplishment of the over-all mission of the Navy depends on our leaders.

General Order 21 defines leadership as the "sum of those qualities of intellect, of human understanding and of moral character that enable a man to inspire and to manage a group of people successfully. Effective leadership... is based on personal example, good management practices, and moral responsibility." These three elements of leadership delineate the scope of this course. No attempt is made to give a comprehensive treatment of all the aspects of leadership. The problems of military strategy and tactics and the clinical analysis of human behavioral drives and motivations are better treated in publications devoted to these phases of leadership. On the other hand, the basic principles of leadership remain the same, whether at the staff level in deploying task

forces or at the petty officer level in managing small groups of individuals. It is these principles which are discussed in this course.

The course is based on General Order 21 which is included as part of the assignment booklet, Effective Naval Leadership, NavPers 15922; The Armed Forces Officer, NavPers 15923; and Principles and Problems of Naval Leadership. The complete course consists of six assignments. The items in each assignment are intended to aid in training, clarifying text material where necessary, and directing your study.

Reign With Reins. Some managers won't delegate. They are afraid they will lose control. Others delegate and worry, wondering just how much damage a subordinate could do if he made a mistake.

When the top man holds the reins of management too tightly he becomes tired. He wears out himself and his people, just as the driver of a wagon tires himself and his horses if he constantly jerks and pulls on the reins.

Reins are used to guide the horse...to start, to stop, to go left, or to go right. After awhile, horse and man get accustomed to one another and begin to work as a team. As soon as the driver feels his horses aren't going to dump the wagon in the ditch, he lets the reins hang loosely; but loose or tight, the reins always remain in the driver's hand. Then if the horses head the wrong way, the driver can quickly prevent serious trouble. However, as long as the horses trot right down the road as they should, they are relatively free.

The task of managing a group of people in an organization is comparable to the wagonmaster and his horses. The manager can do little actual work himself. He must parcel out the work to others, selecting men in whom he has confidence. He gives his staff free rein to do their job while he retains ultimate control in his own hands. ("The Systemation Letter," Ross-Martin Co., Tulsa, Okla., and Navy Management Review, NAVEXOS P910, May 1963.)

Captain Raffetto Selected for Rear Admiral. Capt Edward C. Raffetto, Dental Corps, U. S. Navy, Head, Personnel Branch, Dental Division, Bureau of Medicine and Surgery, Washington 25, D. C., has been selected for promotion to the rank of Rear Admiral in the Naval Dental Corps.

Capt Raffetto was born in Manasquan, New Jersey, graduated from the University of Pennsylvania in 1935 and entered the Navy in 1936. Prior to reporting to his present assignment, Capt Raffetto was the Senior Dental Officer at the Naval Air Station, Norfolk, Virginia, with additional duty as Staff Dental Officer, Commander U. S. Naval Air Force, U. S. Atlantic Fleet. It is anticipated the effective date of his promotion will be 1 August 1963.

Captain Loving Participates in Dental Society Meeting. Capt Robert H. Loving, DC, USN, recently lectured to the Princess Anne Dental Society at Newport News, Virginia. His topics were "Recognition and Therapy of Periodontal Problems" and "Oral Habits and Occlusal Dysfunction."



PREVENTIVE MEDICINE

Unde Venis?

Brian Maegraith, M.A. Oxon., M.B. Adelaide, D. Phil., F.R.C.P., F.R.C.P.E., Professor of Tropical Medicine in the University of Liverpool, England. The Lancet 1(7278): 401-404, 23 February 1963.

The title comes from Juvenal's Third Satire. The idle teddy boy, late at night, accosts the innocent Roman pedestrian with the words

"Where have you been?

"Whose vinegar and winkles are you stuffed with? What cobbler has been eating chopped leeks and boiled sheep's lips with you?"

The context is abusive, but it carries a message for the modern doctor. Where have you been? has become an essential part of the interrogation of a patient.

In these days of fast and frequent travel there is no infection endemic to one part of the world which may not appear in another. Flying enables people to move vast distances within the limits of any incubation period, no matter how short. The time has come to acknowledge the potential significance of the patient's geographical history and to ensure that it is sought and obtained. This is particularly necessary in Europe, where some patients seem to regard their travels as irrelevant to their immediate illness and do not mention them unless specifically asked.

History and Knowledge

The importance of obtaining and interpreting the geographical history is perhaps most obvious in the so-called tropical diseases, which may cause spectacular emergencies, or have less dramatic but equally serious consequences in patients seen outside endemic areas. Most of the serious "tropical" diseases are caused by infective organisms, which can be detected by simple laboratory methods, and the diagnosis is often easy once the possibility has been suspected.

It is necessary to ascertain the recent geographical movements of a patient and to have some knowledge of the associated health hazards.

Geographical History in the Diagnosis of Exotic Disease

It is the exposure in an endemic area that matters, not the climate and not always the length of time spent there.

In some infections, such as malaria or trypanosomiasis, a single exposure to a vector for only a few moments is all that is needed. In others, including blackwater fever and filariasis, longer or repeated exposure may be necessary.

Some "tropical" diseases, such as malaria, have a very wide world distribution, and in most travellers they should be considered as a routine. This is true also of amebiasis, though it is much commoner, and often more florid in the tropics. Schneider (1962) points out that the diagnosis of amebiasis should always be considered where there is a background of poor hygiene and living conditions. Even when the patient has not travelled in an endemic region, he may have been in contact with people who have.

Many helminth infestations are widespread in the tropics and in Europe. Of these, the "dirt" worm infestations—ascariasis, enterobiasis, etc.—are the commonest, and need no geographical history as an aid to diagnosis. But others, such as hookworm disease, may easily be missed unless the relevant information about exposure is obtained, especially if the patient presents with some prominent physical sign, such as hypochromic anaemia.

Consideration or Exclusion

The fact that some diseases have relatively limited geographical distribution may be useful, either in suggesting a diagnosis or eliminating it:

African trypanosomiasis need be thought of only in a patient who has been in the endemic area, which lies across Africa roughly between the parallels 15° North and South. Though trypanosomiasis acts much more slowly than malignant malaria, it may nevertheless kill the patient in whom it remains undiagnosed. Since it gives rise to mental as well as physical signs, it should be considered in any obscure neurotic or neurological case.

Visceral leishmaniasis (kala-azar) also has clearly defined geographical limits, some knowledge of which would greatly help diagnosis in cases presenting with enlarged liver and enlarged spleen, especially when there is fever. Similarly, the cutaneous and mucocutaneous forms are limited in endemic distribution.

Bilharziasis is another infection which is geographically confined and which should be considered in the diagnosis of haematuria or dysentery in people who have visited appropriate endemic regions but can be excluded in those who have not. In schistosome infections the geographical history will help in the presumptive diagnosis of the specific worm concerned. Thus, a patient from Asia is likely to be infected with Schistosoma japonicum, a Brazilian with S. mansoni, and an Egyptian with either S. mansoni or S. haematobium or both.

Leprosy will probably remain undiagnosed unless suspected. It is seldom, if ever, transmitted in Western Europe today, but Europeans may still acquire it in endemic areas where they work for many years. Unless this is realized and the geographical history is obtained the leprosy patient may find himself joining the amorphous dermatological group which wanders aimlessly

and without satisfaction from clinic to clinic; and the passage of time and missed diagnosis may combine to produce irreversible tissue damage.

The virus infections are equally important for the individual, but they have special public-health significance in that some spread rapidly in the community. The prime example is, of course, smallpox—a disease which, more than any other, frightens civilized Europe and which, despite constant publicity, is still sometimes missed. Although smallpox may be endemic in Europe, it is very common in some parts of the tropics. The geographical history can thus be highly significant in patients with a suspicious rash.

One more example of the direct significance of the geographical history is sprue. If a patient with a malabsorption syndrome has lived in the limited regions in which sprue is endemic, the diagnosis must be considered; otherwise, it need not.

From all this it is clear that a knowledge of a patient's visits abroad may be vital in diagnosis and in the associated treatment. A word of caution is necessary, however, since the absence of a suggestive geographical history may not always mean that the diagnosis of an "exotic" disease can be dismissed. Occasionally, the most unexpected "indigenous" infections may be met, such as the *P. vivax* malaria infection referred to the author some years ago from Warrington in a patient who had never left Lancashire, England, in the whole of his long life (Black et al. 1959).

Signs

The interpretation of puzzling physical signs may be greatly helped by the geographical history.

In patients who have lately been abroad the reason for fever may be suggested by their journeys. Suspicion of typhoid may be aroused early in the disease by ascertaining that the patient has been in a focal endemic area within the limits of the incubation period. Thus, in the Tropical Diseases Centre in London last year, the author saw a patient who was one of several who had acquired this infection in the same port at the same time. In this case the geographical history was important to the community as well as to the patient.

In an obscure "haematological" case the geographical history may be of supreme importance:

Hypochromic anaemia arising from hookworm infection is an example; for, unless the cause is diagnosed, cure will not be permanent. The anaemia will respond well to the administration of iron, but will relapse with the cessation of therapy. Information about the possible exposure of the patient in an endemic area is needed to direct attention to the diagnosis. The same is true of the megaloblastic anaemia which may result from infection with the tapeworm *Diphyllobothrium latum*.

High eosinophil-counts are common in helminthic infections, particularly in certain African forms of filariasis.

The interpretation of haemoglobinuria sometimes depends on the geographical history. Blackwater fever may be suspected if the patient has been

recently and repeatedly exposed to falciparum malaria. Favism may be indicated in a Caucasian from the Mediterranean basin.

Clues Not Diagnoses

The geographical history provides the clue for diagnosis, not the diagnosis itself. The patient recently returned from Indonesia may have influenza, not malaria. The patient from West Africa with haemoglobinuria may possess the glucose-6-phosphate dehydrogenase deficiency trait and be suffering from drug toxicity, not blackwater fever (Gilles and Ikeme 1960). To diagnose blackwater fever in a haemoglobinuric patient (whatever his color) merely because he has lived in falciparum endemic areas is no more intelligent than to blame all glycosuria on diabetes.

On the other hand, failure to elucidate the geographical history may sidetrack the doctor, since anaemia, leucopenia, eosinophilia, and other signs induced in the blood by an infection may lead to exclusive diagnostic concentration on the blood changes per se. The patient with kala-azar or loiasis needs a physician not a haematologist.

The Interrogation

The questioning of the patient or his relatives and friends should be as precise as possible in regard to time and location.

The doctor should ask the initial question "Where have you been?" and then try to break down the answers into territories and localities visited, the length of stay, and the kind of life the patient was leading abroad—i.e., city life or the "bush." The questioning should aim to throw light on other aspects of the patient's environment including hygiene and general living standards.

These questions are applicable not only in Europe but also in the tropics themselves, since the distribution of infections, especially those which are vector-borne, is often limited to certain areas within a given territory. The trypanosomiasis and yellow-fever "belts" of West African countries are examples.

The onus must be on the doctor, in the first instance, to seek the history: he should not rely on his patient to volunteer the information. In Europe travel information should be obtained as a routine from any patient who may conceivably have been abroad. Besides general information, local details of travel may be important, such as airports where the patient may have merely "touched down" or seaports he may have "called at." The doctor should bear these points in mind when questioning the patient.

"If he remembers that it takes only one mosquito bite to transmit malignant malaria he will appreciate how vital geographical information can be. All too often the questioner is as lax as the patient and valuable time is unnecessarily lost" (Maegraith and Leithead 1962).

The value of the interrogation will largely depend on the physician's ability to interpret the answers. He will need some knowledge of the global distribution of major diseases such as malaria. If this can be supplemented

by personal experience of particular areas, interpretation may be much easier. Often, moreover, the patient himself or his friends may be able to provide local information.

Conditioning the Medical Profession

In some way or other, the doctors must be conditioned to seek the geographical histories of their patients. To achieve this all grades of the profession, not least the medical student, must be reached.

The Medical Student

There is no reason why the embryo doctor should be allowed to develop in a narrower field than other professionals. He belongs to the world just as much as the next man, and the world today is so constricted by travel that it is essential for the medical student to know something of the diseases which may be brought to him from outside.

If the future doctor is to take his place in the new world, his training will have to include global geographical medicine. But this should be presented not as a "subject" but as a principle.

Nothing more than a change of emphasis is needed. The modern student is taught to obtain from each patient the personal, family, and clinical history. He must also be taught to obtain the geographical history. This could be done merely by printing the words "Geographical History" on every teaching-hospital case-sheet. The average student would quickly adjust himself to the idea. The significance of the geographical history could also be emphasized in routine discussions on differential diagnosis. Of course this happens today in some hospitals. The aim should be to make it a matter of routine everywhere.

Once the geographical history has been ascertained, however, some sort of interpretation is necessary. Here there is more difficulty. Nevertheless, every doctor who qualifies today should have at least some idea of where the major global infectious diseases occur. Detailed information about the localized distribution of diseases such as loiasis is beyond the scope of the harassed student; but he must be taught that disease may originate outside the country and ~~that he has a duty to discover where his patients have been.~~ When our future doctors have been conditioned in this way the diagnosis of exotic disease should cease to be fortuitous.

The Practitioner

The doctor who has not discovered that his patient has been exposed to malaria has not done his job properly. If he has not thought to ask for this information he has not been trained properly.

The major burden of diagnosis and treatment falls upon the present practitioners, who must be kept aware of the potential significance of the geographical history.

The general practitioner is the key man, and he needs some realistic reminder for himself and his patients. This could take the form of a booklet or system of cards in which the doctor could check the possible significance of signs and symptoms which puzzle him and in which he could recognize at a glance the medical potential of his patients' travels. Nothing elaborate is required—certainly not a potted textbook of exotic diseases. At most, there need be only a few pages and maps illustrating the global distribution of the major infectious diseases. The maps are most important. They should be on his desk and hanging on his consulting-room walls, to remind him and his patients of the medical importance of world travel.

Persuading the practitioner to obtain a geographical history is of course only half the battle. Information on diagnostic techniques and lines of treatment must also be available, with clear indications as to what can be managed in the clinic and what would require further advice and professional help.

Special Categories of Doctors

Certain practitioners may be intimately concerned with disease acquired outside Europe and the United States.

Doctors in the Armed Services are presumably trained in global medicine; and during their service they are at an advantage because they are commonly dealing with patients who are disciplined or have official documents which disclose their geographical movements. Their duty to their personnel extends beyond the Service itself, to those who are on leave or who have been recently discharged. These should be warned to report their movements abroad to any practitioner from whom they may seek advice.

Doctors in the Merchant Marine are also in a special category, dealing with disciplined crews on the one hand and passengers on the other. They are usually well aware of the medical hazards of the countries and ports they have visited. They, too, have duties beyond their Service in regard to crews on leave, discharged, or temporarily ashore on pools.

School medical officers are extremely important in this respect. During vacations chartered flights now take schoolchildren to visit their parents and relatives in many parts of the tropics. Regular flights are made every year to Africa and the Far East, transporting thousands of children into areas where infectious diseases are highly endemic. Those in charge of these children on their return to school, especially the school doctors, must be constantly aware of the risks that such infections may bring both to the individual child and the community.

Doctors concerned with public-health services should need no special comment. The safety of the community depends on their unobtrusive efficiency and their appreciation of global medical patterns.

The Patient

The patient owes it to himself and to the community to make sure that the doctor who examines him knows where he has been.

Hazards and their Reduction

Certain types of occupation carry particular risks of exotic disease. Servicemen and sailors on leave or on discharge have already been mentioned. Pilots and crews of aircraft sometimes regard health precautions as unnecessary, possibly because they spend so short a time in airports in endemic areas. Doctors and nurses tend to think more of risks to patients than of themselves. In interpreting a history, the physician should take such things into consideration.

A person going to the tropics may need protection before he goes as well as after his return. Information based on the area to which he is going should be available at inoculating centres; it should be provided with the ticket. A pamphlet prepared for this purpose might have some disadvantages psychologically, but worry is a minor hazard in comparison with the diseases which may be acquired if precautions are not taken. The possibility of protection is more likely to give the patient confidence, and a better balance of mind, than to arouse needless fear of infection. Particular care should be taken over the proper drilling of parents and children in this respect before, during, and after travel.

Many people in the tropics live in cities where antimalarial or other precautions may be unnecessary. They must be taught that a visit of even a few hours to neighboring endemic areas, or passage through an inadequately protected airport, may expose them to infection. There are many unfortunate examples of the consequences of not appreciating this.

The simple rules of protection against malaria and other infections in the tropics are just as important to the individual and sometimes to the community as smallpox vaccination, which is enforceable by international law.

Conclusion

The object has been to demonstrate that in this shrinking world the geographical movements of a patient constitute a vital element of his medical history.

(Communicable Disease Branch, PrevMedDiv)

* * * * *

The Pop Bottle Can Be a Dangerous Weapon!

This Week in Public Health 12(9): 88, March 4, 1963.

Bottles containing carbonated beverages can be a potentially dangerous weapon, at least in a warm climate, was the finding of 2 U. S. Army physicians while they were stationed at a military hospital in Puerto Rico. In a letter to the Journal of the American Medical Association, the Medical Corps officers stated that 7 persons were injured by fragments of exploding bottles. The injuries ranged from simple cuts to the loss of an eye. In each case the bottle had been subjected to relatively high air temperatures and had been agitated.

This bizarre type of accident is probably not an infrequent occurrence, particularly during the warm seasons and in tropical climates, the doctors warned. They suggested that as a safety precaution such bottles could be altered or replaced by cans.

NOTE: Beware of leaving bottles of carbonated beverages in automobiles on hot days, especially when the windows are turned up. It was reported in the newspapers a few years ago that one such act resulted in an explosion so violent that it blew out most of the automobile glass. Luckily, no person was in the car at the time. The trunk of the car might have been a better or safer place.

—Editor

* * * * *

Thallotoxicosis from Accidental Ingestion of Pesticides

JAMA Editorial, Journal of the American Medical Association 183(7): 590, 16 February 1963.

In spite of regulations by the U. S. Department of Agriculture limiting the content of thallium sulphate in household pesticides, a disturbing number of cases of thallium sulphate poisoning (thallotoxicosis) are occurring throughout the southern United States.

The need for stronger legislation which would completely curtail the household use of thallium sulphate-containing pesticides is stressed as the only effective means of stopping accidental thallium sulphate poisoning. Twenty-one percent of the cases occurred after the present legislation was enacted.

Thallium sulphate is a slow-acting, cumulative poison which has been used for many years as a rodenticide and insecticide. The baits are often sweet syrup, or doughnut and cookie crumbs exposed in open containers. Children are almost always the victims of this poison, as they mistake these products for food because of their palatable nature. The symptomatology varies with dose, age, and acuteness of intoxication. One ounce of the presently marketed mixtures can be lethal for a 25 kg. (55 lb.) child. When large doses are consumed, the first symptoms are gastroenteritis, gastrointestinal hemorrhage, tachycardia, and headache. Neurologic symptoms usually follow in 2 to 5 days. Delirium, hallucinations, convulsions, and coma are seen with severe poisoning, and death from respiratory paralysis may follow in 5 to 7 days. When smaller doses are consumed, alopecia, ataxia, muscle weakness, and peripheral neuropathy are usually the presenting symptoms.

* * * * *

Vector Control Without Insecticides

WHO Chronicle, World Health Organization, Geneva 16(12): 463, Dec 1962.

The dramatic successes achieved in vector control when the synthetic insecticides first came into use led to a neglect of other methods that were being explored earlier this century. In recent years, however, the rapidly increasing number of insect species developing resistance to a variety of insecticides has raised doubts about the long-term value of chemical methods of control. At the same time, attention has been drawn to the dangers to other forms of wildlife and to man resulting from the non-selectivity of the insecticides. There has, therefore, been a revival of interest in procedures based on biological control and on environmental manipulation. Some of these, such as the use of fish of the genera Gambusia and Lebistes against anopheline larvae, were being tried with encouraging results before the Second World War, while more recently experiments have been undertaken with disease organisms specific to certain insect pests. Furthermore, a sterilization method has led to eradication of the screw-worm (an important cattle parasite) from Curacao and large tracts of the southern USA. Rapid advances in insect pathology are extending the range of biological control possibilities.

WHO has given support to a number of studies on Coelomomyces, a fungus that attacks mosquitoes. In 1958-60, a species from Singapore was successfully established in the Tokelau Islands in the South Pacific, and earlier this year an ecological investigation was made of a species responsible for heavy natural mortalities of Anopheles gambiae in Northern Rhodesia. At present, laboratory studies of these fungi are being undertaken with the aim of developing suitable culture methods as a preliminary to further field tests. To assist the Organization to expand its research program, a Scientific Group on the Utilization of Biotic Factors in Vector Control was recently convened by WHO. The Group, which met in Geneva from 29 October to 3 November 1962, reviewed the existing state of knowledge of viruses, bacteria, fungi, protozoa and other organisms that might be used for the biological control of vectors of human disease, and also considered the possibilities of insect sterilization procedures and environmental manipulation. The ultimate goal is an integrated program of field operations, embodying both biotic control procedures and conventional chemical methods.

* * * * *

Arsenic Investigation - Arsenic poisoning of a 23-year-old white woman secretary at a Kansas feed mill led to an investigation of the use of 3-nitro, 4-hydroxyphenylarsonic acid and 4-nitrophenylarsonic acid as an additive in feed during milling. The poison was believed to have reached the secretary by way of contaminated sheets of operational data sent to the office for tabulation from the feed-mixing area. (U.S. DHEW PHS Public Health Reports 78(5): 375, May 1963.)



Did you know:

That in November, 1962, a total of 84 (27%) of a student body of a boarding school in Oklahoma, were found positive upon examination (with the aid of a magnifying loupe) for the presence of acute follicular conjunctivitis?

That the attack rate (42.9%) for girls using eye makeup was much higher than for those not using eye makeup (25.9%)? Supervisors noted that it was common for several girls to share the same eye makeup on any one day. The attack rate (36.8%) for female students was significantly higher than that for male students (16.2%). (1)

That Creighton (1894) reported many measles epidemics with a high mortality, the highest having been recorded by Gannelon (1892) in the Children's Orphanage Assistance in Paris? In this orphanage, between the years 1867-72, there were 612 deaths among 1,256 children who developed measles.

In the years 1807-12, measles accounted for 10.76% of all deaths in the general population of the city of Glasgow. Over the next 100 years, although the mortality declined, it still remained high among young children. (2)

That fresh blooms of plants (sweet clover, red clover, and mustard), honey or sugar solutions (buckwheat honey, sweet clover honey, sucrose, and glucose), and flower extracts (rose moroc, rose, strawberry, and lilac) were tested against water controls to determine the role of fragrance as a factor in orienting Aedes aegypti mosquitoes to flowers?

Findings were that some flower fragrances induce significantly larger mosquito aggregations than water, that buckwheat and sweet clover honey are considerably more effective than water in inducing aggregations, and that some perfumes (e. g., rose) can induce aggregations in the same way as honey and flower fragrance while others (strawberry and lilac) apparently repel mosquitoes. (3)

That DDVP insecticide, rapidly lethal to a wide range of pests and quickly broken down once its work is done, is registered for many household, industrial, and farm applications? (4)

That malaria vector problems faced in South-East Asia include:

(1) Mosquitoes which bite outside, but not inside, dwellings, (2) insecticide resistance, (3) difficulty of eliminating low endemicity transmission by less efficient vectors, (4) presence of many vectors in certain places, (5) identification difficulties in some species, (6) need to determine the importance of monkey malaria and important vectors of monkey-to-monkey malaria transmission, (7) need to determine whether monkey vectors can or do transmit malaria to man, (8) need to acquire more information on animal vs. human blood preference in certain vectors, (9) need for acquiring more vector potential information concerning certain vectors, and (10) need for testing certain residual insecticides in dwellings against certain suspect vectors? (5)

Bibliography

- (1) Morbidity and Mortality Weekly Report, USDHEW, PHS, CDC, Atlanta, Ga., Vol. 22, No. 16, Page 134, 26 Apr 1963
- (2) The Journal of Hygiene, Cambridge University Press, London, N. W. 1, Vol. 61, No. 1, Page 117, Mar 1963
- (3) Public Hlth. Engineering Abstracts, USDHEW, PHS, Vol. XLIII, No. 4, Abstract No. 496, Page 88, Apr 1963
- (4) Public Hlth. Engineering Abstracts, USDHEW, PHS, Vol. XLIII, No. 4, Abstract No. 491, Page 87, Apr 1963
- (5) Public Hlth. Engineering Abstracts, USDHEW, PHS, Vol. XLIII, No. 4, Abstract No. 487, Page 86, Apr 1963

* * * * *

The Effects of Drugs on the Driver

W. H. Neil, Traffic Safety 62(4): 26, April 1963

Many drugs can affect an individual's ability to operate a motor vehicle safely. These drugs may affect driving ability either advantageously or adversely. With the exception of alcohol, which accounts for between 20 and 50% of all fatal accidents in the United States today, statistics are not available on the effects of these drugs on the over-all accident rate. Statistics of this nature are sorely needed but will be difficult, if not impossible, to obtain. Legislative remedial action is probably not indicated, except in the case of alcohol, unless and until the influence of these medications on the over-all accident rate can be shown to be a significant factor.

* * * * *

RESERVE**SECTION**

Control and Organization of the Naval Reserve
(continued)

The Naval District Commandants are under the Military command of the Commander, Naval Reserve Training Command, for Naval Reserve training matters. The Headquarters, Naval Districts, are under the management control of the Chief of Naval Operations.

The Naval District Commandants exercise military command of all Naval Reserve Training activities within their jurisdiction, under the Commander, Naval Reserve Training Command.

The Naval District Commandants direct and supervise the training and administration of the Selected Reserve, other than the Naval Air Reserve, as prescribed by the Commander, Naval Reserve Training Command, to ensure its readiness for utilization in time of war or national emergency or such other times as the National security may require. The various activities of the district headquarters' staffs shall perform appropriate functions for the Naval Reserve as for the Regular Navy.

The Naval District Commandants direct and supervise the training and administration of the Naval Reserve Officers' Schools (NROS) and Specialist programs, other than Naval Air Reserve, as prescribed by the Commander, Naval Reserve Training Command.

The Naval District Commandants administer, maintain and exercise operational control of assigned Naval Reserve Training ships, and exercise operational control of other Naval Reserve Training ships when assigned for specific Naval Reserve Training cruises, under the Commander, Naval Reserve Training Command.

Other principal duties of the Naval District Commandants are as follows:

Recruiting of Reservists so as to maintain the Selected Reserve (OTA) within their districts at the required strength.

Administration of Naval Reservists under their jurisdiction.

Assigning Naval Reservists under their jurisdiction to active duty for training in accordance with established policies.

Recommending to Commander, Naval Reserve Training Command, the overhaul schedules for assigned Naval Reserve Training Ships. When scheduled, arranging for overhauls.

Evaluation, by inspections and other means, of the state of readiness of the Selected Reserve (OTA), and the effectiveness of the administration and training of the Naval Reserve Officers' Schools (NROS) and Specialist programs, as prescribed by the Commander, Naval Reserve Training Command.

Administration of the Naval Reserve Competition (OTA) within their districts as prescribed by Commander, Naval Reserve Training Command.

Reporting annually, and at such other times as appropriate, to the Commander, Naval Reserve Training Command, on the state of training and readiness of the Selected Reserve (OTA) and on other Naval Reserve matters.

Maintaining district mobilization plans and procedures current and consistent with the concept for mobilization of the Naval Reserve.

Planning for and maintaining the Naval Reserve Training Centers and Facilities, including their equipment, required for the support of the Naval Reserve Program (OTA). Providing for the logistic support of all drilling units. (NOTE): Some of the foregoing functions will eventually be assumed by the Naval Reserve Manpower Center.

The Chief of Naval Air Reserve Training is under the military command of the Chief of Naval Air Training and is responsible for the enlistment, training, and administration of Reservists assigned to the Naval Air Reserve Program. The Chief of Naval Air Reserve Training is charged with the responsibility of ensuring the readiness of the Naval Air Reserve for utilization in time of war or national emergency or such other time as the national security may require.

Each Naval Reserve unit shall be administered by its Commander or Commanding Officer in accordance with the instructions of Commander, Naval Reserve Training Command and the cognizant Commandant, CNARESTRA, or comparable administrative authority and the rules and regulations set forth in Navy Regulations, in this manual and in other departmental publications and directives.

The administrative duties required of commanders and commanding officers include matters with respect to maintenance of required records, submission of required reports, and the recruiting, training, discipline and welfare of personnel under their command.

All Naval Reservists residing within a Naval District, except those assigned to the Naval Air Reserve, shall be under the jurisdiction of the Commandant of the Naval District in which they reside.

Reservists residing in the area of the Potomac River Naval Command and the Severn River Naval Command are under the jurisdiction of the Commandant, FIFTH Naval District, or the Chief of Naval Air Reserve Training, as appropriate.

Naval Reservists assigned to the Naval Air Reserve shall be under the jurisdiction of the Chief of Naval Air Reserve Training, regardless of their naval district of residence.

Jurisdiction over reservists residing in areas not listed above will be as prescribed in directives issued by the Chief of Naval Personnel.

For the purpose of considering, recommending and reporting to the Secretary of the Navy on Naval Reserve policy matters, there shall be appointed by the Secretary of the Navy, annually, a Board to be known as the National Naval Reserve Policy Board. The Board shall be convened at the Navy Department at least once a year, normally in May, but its members, and their

designated alternates, shall serve throughout the year subsequent to their appointment to consider such matters as may be referred to them as a Board or individually.

The National Naval Reserve Policy Board, consisting of 20 members, will be composed of 5 regular Navy officers, serving in the administrative organization of the Naval Reserve, and 15 Naval Reserve officers, of whom at least 10 shall be in an active status assigned to this duty from inactive duty. The Chief of Naval Personnel shall obtain nominations from the COMNAVRES-TRACOMD, CNARESTRA and Naval District Commandants and in conjunction with the Chief of Naval Operations, prepare a recommended precept and membership of the Board including the designation of principal and alternate members. In order to lend continuity, members of the Board may be reappointed annually not to exceed three terms, except that at least two regular Navy members and five Naval Reserve members shall be replaced each year.

(to be continued)

Bureau of Personnel Manual
Part H

* * * * *

POSTAGE AND FEES PAID
NAVY DEPARTMENT

DEPARTMENT OF THE NAVY
U. S. NAVAL MEDICAL SCHOOL
NATIONAL NAVAL MEDICAL CENTER
BETHESDA 14, MARYLAND

OFFICIAL BUSINESS

Permit No. 1048